



PATENT

Serial No. 09/248,158

Docket No. 342312000600

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Barbara Phillips
Barbara Phillips

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Zhengyu YUAN and Zhong-Xiao CHEN

Serial No.: 09/248,158

Filing Date: February 9, 1999

For: DIRECT ADSORPTION
SCINTILLATION ASSAY FOR
MEASURING ENZYME ACTIVITY
AND ASSAYING BIOCHEMICAL
PROCESSES

Examiner: Maurie Garcia, Ph.D.

Group Art Unit: 1627

DECLARATION BY DR. ZHENGYU YUAN AND MS. ZHONG-XIAO CHEN

PURSUANT TO 37 C.F.R. § 1.131

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

We, the undersigned, Zhengyu YUAN and Zhong-Xiao CHEN, hereby declare as follows:

1. We are co-inventors of the above-referenced patent application, and we are familiar with the contents thereof.

2. I, Zhengyu Yuan, reside at 35645 Beeching Lane, Fremont, CA 94536; and I, Zhong-Xiao Chen, reside at 3325 Adelaide Way, Belmont, CA 94002.

3. We have reviewed Kasila et al., U.S. Patent No. 5,972,595, which granted on U.S. patent application no. 09/212,211, filed on December 16, 1998, and which claims priority to U.S. provisional application no. 60/068,244, filed on December 19, 1997. The Kasila patent has been cited against our above-referenced patent application by the U.S. Patent and Trademark Office.

4. Prior to December 19, 1997, in this country, we reduced to practice a direct adsorption scintillation assay, as described and claimed in our patent application. The acts described herein, which are relied upon to establish a date of reduction to practice of the claimed invention prior to December 19, 1997, were carried out in the United States.

5. Accompanying this Declaration is a copy of a portion of an invention description written prior to December 19, 1997, labeled "Exhibit A." The dates and the facsimile header have been redacted. This invention description was sent by facsimile transmission to the office of our current patent counsel prior to December 19, 1997.

6. The invention description indicates that we reduced our invention to practice; this reduction to practice occurred prior to December 19, 1997. The invention description describes the use of the invention to measure the synthesis of UDP-Mur-NAc-L-alanine by the enzymes MurA, MurB, and MurC. When UDP-Glu-NAc, tritiated L-alanine, and the remainder of the various compounds listed in the reaction mixture on pages 4-5 of the invention disclosure are combined, a sample is produced which contains at least two molecules. One molecule produced by enzymatic reaction, UDP-Mur-NAc-L-[³H]alanine, is highly negatively charged. It

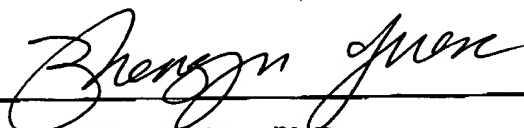
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interacts by adsorption with the walls of a FlashPlate (a scintillating material) that has been derivatized with methyltrioctylammonium bromide, which impacts a positive charge to the surface of the material. However, the tritiated L-alanine alone does not adsorb to that material, as it bears no net charge (it is a zwitterion having one positive and one negative charge). Therefore the UDP-Mur-NAc-L-[³H]alanine has a presence of a general molecular property-based (i.e., charge-based) interaction with the surface of the scintillating material distinct from that of L-alanine. Measurement of the scintillation provides a useful assay for the completion of the reaction, as can be seen from the data presented in Figure 1, page 5 of Exhibit A. Please note that, while the invention description switches between present and past tenses, the experiments described had been completed by the time the invention description was prepared, as evidenced by the actual data in Figures 1, 2, 3, and 4 of Exhibit A.

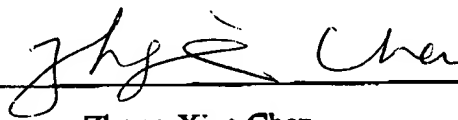
7. The subject matter which is claimed does not correspond to a lost count in an interference and is not otherwise barred to the applicants.

8. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true. We declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Nov. 15, 2000
Date


Zhengyu Yuan, Ph.D.

Nov. 15, 2000
Date


Zhong-Xiao Chen